

VAPORIZER CONTROL POINTS

1. Level - Accurate control of the vaporizer level is very critical.

If the level goes too low, organics feed to the reactor would be lost causing a very hazardous situation. This would cause an excess of oxygen within the reactor which would lead to a fire or explosion. It would also defluidize the reactor and possibly back oxygen into the organics piping which is also very dangerous. If the level goes too high, there would be liquid carryover which would plug the feed piping and heads. This would lead to maldistribution of feeds. The results of this would be dead tubes and possibly internal reactor fires.

2. Steam - The amount of organics vaporized is in direct proportion to the amount of steam. Since there is no measurement of the organic vapors, the steam flow is the only means of measuring the amount of organic fed to the reactor.

3. Blowdown - The blowdown from the vaporizer does two things; it keeps carbon and heavy organics from concentrating in the vaporizer. These components cause fouling and plugging. The blowdown also controls the concentration of ferric chloride. Ferric chloride at the pressures and temperatures that the vaporizer runs will cause cracking which will also cause fouling.

4. Chest Pressures - The chest pressure should be monitored to insure that steam trap is working properly. Since the chest pressure is directly related to the amount of heat transfer, it can tell you several different things. A high chest pressure can mean a fouled or plugged reboiler. It can also mean that the blowdown is off which will concentrate heavy materials. A low chest pressure can be caused by a steam trap blowing through or too much blowdown.

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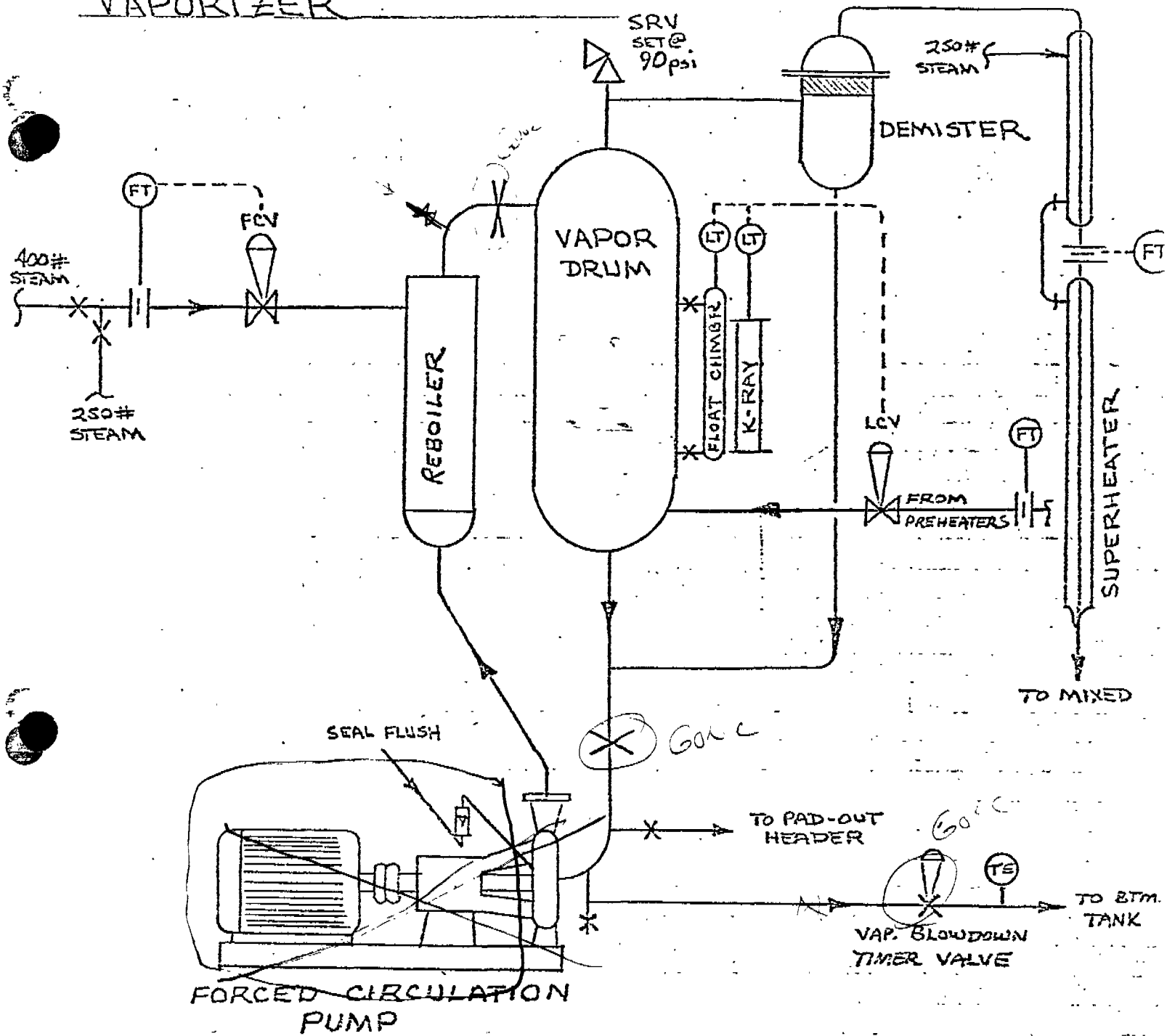
VAPORIZER

1. Organic recycle feed to the vaporizer is regulated by LCV.
2. Steam to the reboiler is flow controlled. There are valves which allow steam supply from either 250 lb. or 400 lb. system. 400 lb. steam is normally used with 250 lb. backup. Steam to the superheater jacket is from the 250 lb. system.
3. Blowdown purge is regulated by on/off timer valves. Timer controllers are mounted behind the south control board. Control iron level (FeCl) in blowdown in 150-200 ppm range. In addition, the temperature of the blowdown is recorded on the control board for continuous monitoring.
4. Valves and connections are available for mounting a thermosiphon reboiler.
5. Liquid level is monitored by two units:
 1. Float chamber
 2. K-ray (which is an X-ray type unit).Both level monitors tie into the level controller and either can be used for control.
6. Exit gases go through a demister to remove any liquid droplets that may have entrained. It is a mild steel pot with a monel mesh pad in the top. Liquid drains back down into the pump suction line.
7. The forced circulation pump seal flush is very important as is the cooling water on the seal housing. A seal replacement on this pump costs about \$1,500.

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SL 020233

VAPORIZER



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